

REMARKS

This amendment is in response to the Office Action of August 23, 2007 in which claims 1-20 were rejected under 35 U.S.C. 103(a).

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In the Amendment submitted herein, various of the original claims are changed in ways believed related only to matters of form. For example, reference numerals/labels are removed from the claims, which change does not affect the scope of the claims per MPEP § 608.01(m) (the use of reference characters is considered as having no effect on the scope of the claims).

Claims 3, 4, 6 and 7 are cancelled. Also selected claims are amended as explained below. New claims 21-29 are added. All introduced amendments are fully supported by the specification (e.g., see paragraphs 0020 and 0038 of US publication of the present invention US 2005/0088560 for supporting claims 23, 26 and 28-29, paragraphs 0039-0041, 0043-0044 for supporting claims 21 and 24, and paragraph 0033 for supporting claims 25 and 27).

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In Section 2, claims 1, 3-5, and 10-12 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lin, US 6,778,216 in view of Lyon et al. US Patent 6,512,858.

Regarding independent claim 1, the Examiner's arguments are inaccurate, do not follow the MPEP guidelines and, therefore, need further clarification in order to distinguish the present invention from Lin.

Paragraph 2143 states:

"To establish a *prima facie* case of obviousness three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)."

The applicant refers to arguments made in the Amendment A submitted to the USPTO on May 21, 2007. Some arguments are repeated herein for completeness.

First, in regard to claim 1 of the present invention, the reference of Lin quoted by the Examiner is a prior art described in the background section of the present patent application wherein the high-resolution image is sent to the processing unit (preview processor 5 shown in Figure 1 of Lin) which then performs vertical and horizontal downscaling. The full image of Lin is stored in memory 7 of Lin (see col. 3, lines 64-67).

Lin does not explicitly shows the camera sensor as a separate module which performs horizontal downscaling, as recited in claim 1 of the present invention. In other words, the preview processor 5 of Lin cannot simultaneously belong to the camera sensor 14 and the processing block 16 shown in Figure 1 of the present patent application and which are

separated by a camera bus (e.g., CCP). Lin's solution uses an internal bus (as shown in Fig. 1) that is totally different bus than CCP (or other present camera buses). Also, it is not completely clear where this camera bus (or its equivalence) could be located in Figure 1 of Lin, but most likely it could be an arrow between CCD-controller 4 and the internal bus or an arrow between blocks 4 and 6 in Figure 1 of Lin.

Moreover, the preview processor 5 of Lin must be able to read data from a memory 7 (via the internal bus), and thus it needs to be located on a processor side, otherwise a separate memory for storing a full scale image would be also needed on a camera sensor. The applicant is of opinion that this is not the case according to Figures or description of Lin; and thus the preview processor 5 of Lin is not comprised in a camera module. Therefore, Lin does not disclose the step "generating a real-time horizontally downsampled video signal using horizontal downscaling of the real-time video signal by the camera sensor" as recited in claim 1 of the present invention. Even if the Examiner will argue that the preview processor 5 belongs to the camera sensor, contrary to what is articulated above, then Lin does not disclose the step "generating the real-time vertically and horizontally downsampled video signal using vertical downscaling of the real-time horizontally downsampled video signal by a processing block" of claim 1 of the present invention because the preview processor 5 cannot belong to two modules at the same time, as argued herein.

Thus, in regard to claim 1 of the present invention, Lin or Lyon et al. does not disclose clearly the fact that horizontal downscaling is performed by the camera sensor

and vertical downscaling is performed by the processing block.

Furthermore, the Examiner admits that Lin does not disclose "generating a real-time horizontally downscaled video signal using horizontal downscaling of the real-time video signal by the camera sensor without a line memory". As it was pointed out above, Lin does not disclose this step even without added limitation "without a line memory" (added in the Amendment A of May 21, 2007). Moreover, the Examiner stated on page 2 of the Office Action of August 23, 2007 that Lyon et al. disclose first and third steps of claim 1 of the present invention as well. The Examiner arguments are confusing.

First, in col. 3, lines 7-9, Lyon et al. talk about orientation (vertical or horizontal) and has nothing to do with downscaling recited in the present invention, contrary to what is alleged by the Examiner.

Secondly, in col. 3, lines 42-65, Lyon et al. talk about downscaling of images in horizontal and vertical direction simultaneously before any processing is done to accomplish, for example, partial high resolution partial image display or displaying an image with lower resolution by skipping certain row and columns until a predetermined number of rows and columns can be displayed. This is different from the embodiment recited in claim 1, wherein horizontal downscaling is performed in sensor as a first separate step before vertical downscaling which is performed by a processing block.

The difference between the present invention in regard to claims 1 and the reference of Lyon et al. quoted by the Examiner can be further ascertained from description

provided by Lyon et al. in col. 4, lines 1-24, stating: "The full frame viewscreen mode, by counting the steps of  $K_n$  for row addressability and counting in steps of  $K_m$  for column addressability, selectively skips rows and columns of the active pixel sensor array when selecting pixel sensors to display onto the viewscreen." It is further stated by Lyon et al. that typically  $K_n$  is equal to  $K_m$  meaning that Lyon et al. does not perform a horizontal downscaling first before vertical downscaling is performed, contrary to what is alleged by the Examiner. According to Lyon et al. vertical and horizontal downscaling are performed **simultaneously** which is different from the present invention.

Therefore, further reference by the Examiner to col. 6, lines 25-34 of Lyon et al. in regard to the step of "generating the real-time vertically and horizontally downscaled video signal using vertical downscaling of the real-time horizontally downscaled video signal by a processing block of the image generating and processing block" recited in claim 1 of the present invention, is irrelevant because Lyon et al. do not disclose this step, as argued above.

Thus, Lin and Lyon et al. do not describe and/or teach all limitations of the independent claim 1 of the present invention and fail to meet the third criterion of MPEP paragraph 2143 quoted above.

Moreover, combining references Lin and Lyon et al. (even we assume that all limitations are disclosed by these references) will teach away from the present invention and from their combination. Further arguments can be made in regard to motivation to combine references of Lin and Lyon et al. and the reasonable

expectation of success, if requested by the Office and as required by the MPEP paragraph 2143, quoted above to, establish a *prima facie* case of obviousness.

Thus, based on all above arguments, claim 1 is not obvious under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Lyon et al.

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Furthermore, the applicant would like to point out that another important feature disclosed in the present invention is not taught by Lin or Lyon et al. This is the fact that horizontal downscaling (as well as vertical downscaling) is performed using combining weighted pixels values according to a predetermined algorithm which is described in detail in paragraphs 0039-0041 and 0043-0044 of US publication of the present invention US 2005/0088560. Lin in col. 4, lines 49-60 mentions using an accumulator 511 which only sums the pixel values and for that reason it is actually similar to the normal limited analog pixel binning methods. The accumulator 511 can only sum two pixel values, but not use the weighted average of pixel values that are required for the proper phase changes (or quality), as recited in embodiments of the present invention. Lyon et al. teach only skipping pixels when downscaling.

Therefore this feature ("combining weighted pixels values according to a predetermined algorithm") is added by the applicant in amended claim 1 submitted herein, which further separated the present invention recited in claim 1 from the prior art quoted by the Examiner. The limitation "without a line memory" is moved from claim 1 to dependent claim 2. The Applicant is of opinion that the limitation

"without a line memory" was added in claim 1 in the Amendment A of May 21, 2007 for clarification purposes only and actually is not critical for distinguishing the original claim 1 from the references of Lin or Lyon et al. quoted by the Examiner because of the arguments presented herein and in the remarks of the Amendment A of May 21, 2007.

Claim 10 is amended in a similar way as claim 1. Since amended independent claim 10 is similar in scope to claim 1 of the present invention, the above arguments regarding novelty and non-obviousness of independent claim 1 are fully applied to claim 10 of the present invention. Therefore, claim 10 is not obvious under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Lyon et al. as well.

Regarding claims 3-5 and 11-12, these are dependent claims of independent claims 1 and 10. Independent amended claims 1 and 10 are not unpatentable over Lin as shown above. Since each of the dependent claims 3-5 and 11-12 narrows the scope of the corresponding novel and non-obvious independent claims 1 and 10, non-obviousness of claims 1 and 10 will compel non-obviousness of claims 3-5 and 11-12.

More arguments in regard to specific limitations recited in dependent claims to obviate their obviousness, alleged by the Examiner, can be made if requested by the Office.

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In Section 4, claim 2 and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lin, US 6,778,216

in view of Lyon et al. US 6,778,216, as applied to claims 1 and 10 and further in view of Haavisto, US 2002/0071037.

Regarding claims 2 and 13, they are dependent claim of independent claims 1 and 10. Independent amended claims 1 and 10 are not unpatentable over Li in view of Lyon et al. as applied to claims 1 and 10 and further in view of Haavisto, as shown above. Since dependent claims 2 and 13 narrows the scope of the novel and non-obvious independent claims 1 and 10, non-obviousness of claims 1 and 10 will compel non-obviousness of claims 2 and 13, respectively.

In addition the applicant refers to arguments made in remarks of Amendment A submitted on May 21, 2007 in regards to claim 2 (the same is applied to claim 13).

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In Section 5, claims 6 and 8 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lin, US 6,778,216 in view of Lyon et al. US 6,778,216, as applied to claims 5, and further in view of Yi, US 7,003,040.

Claims 6 is cancelled and claim 8 is amended to be dependent of claim 1 which will compel its non-obviousness.

More arguments to obviate obviousness in regard to specific limitations recited in dependent claim 8 and motivation to combine the quoted references, as alleged by the Examiner, can be further made if requested by the Office.

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In Section 6, claim 14-16, 18 and 19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lin, US 6,778,216 in view of Lyon et al. US 6,778,216 and Yi, US 7,003,040.



Claim 14 is amended in a similar way as claim 1. Since amended independent claim 14 is similar in scope to claim 1 of the present invention (i.e. having similar critical limitations distinguishing from the prior art quoted by the Examiner), the above arguments regarding novelty and non-obviousness of independent claim 1 are fully applied to claim 14 of the present invention. Therefore, claim 14 is not obvious under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Lyon et al. and Yi as well.

Regarding claims 15-16, 18 and 19, these are dependent claims of independent claim 14. Independent amended claim 14 is not unpatentable over Lin in view of Lyon et al. and Yi, as shown above. Since each of the dependent claims 15-16, 18 and 19 narrows the scope of the novel and non-obvious independent claim 14, non-obviousness of claim 1 will compel non-obviousness of claims 15-16, 18 and 19.

More arguments to obviate obviousness in regard to specific limitations recited in dependent claims and motivation to combine the quoted references, alleged by the Examiner, can be further made if requested by the Office.

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In Section 7, claim 20 was rejected under 35 U.S.C. 103(a) as being unpatentable over Lin, US 6,778,216, in view of Lyon et al. US 6,512,858 and Yi, US 7,003,040, as applied to claim 16 above, and further in view of Haavisto, US 2002/0071037.

Regarding claim 20, it is dependent claim of independent claim 14. Independent amended claim 14 is unpatentable over Lin in view of Lyon et al. and Yi as applied to claim 16, and further in view of Haavisto, as shown above. Since dependent claim 20 narrows the scope of

the novel and non-obvious independent claim 14, non-obviousness of claims 14 will compel non-obviousness of claim 20.

More arguments to obviate obviousness in regard to specific limitations recited in claim 20 and motivation to combine the quoted references, alleged by the Examiner, can be further made if requested by the Office.

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In Section 7, claims 7 and 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lin, US 6,778,216, in view of Lyon et al. US 6,512,858 and Yi, US 7,003,040, as applied to claims 6 and 16 above, and further in view of Atsum, US 2005/0036046.

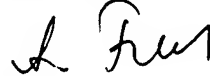
Regarding claims 7 and 17, these are dependent claims of independent claims 1 and 14. Independent amended claims 1 and 14 are not unpatentable over Lin, in view of Lyon et al. and Yi, as applied to claims 6 and 16 above, and further in view of Atsum, as shown above. Since each of the dependent claims 7 and 17 narrows the scope of the corresponding novel and non-obvious independent claim 1 and 14, non-obviousness of claims 1 and 14 will compel non-obviousness of claims 7 and 17.

More arguments to obviate obviousness in regard to specific limitations recited in dependent claims and motivation to combine the quoted references, alleged by the Examiner, can be further made if requested by the Office.

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The objections and rejections of the Office Action of August 23, 2007 having been obviated by amendment or shown to be inapplicable, withdrawal thereof is requested and passage of claims 1-20 to issue is solicited.

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